1/16

FIG. 1

2/16

BATTERY-POWERED DATE/TIME CLOCK ~220

NAVIGATION/ RECEIVER PROCESSOR ~210

CONTROL DISPLAY UNIT ~212

DIGITAL SIGNAL PROCESSOR (DSP) 208

CHANNEL 1

CHANNEL 2

CHANNEL N

RF/IF DOWNCONVERTER A/D CONVERSION ~206

LOCAL OSCILLATOR INPUTS

TO DSP CHANNELS

FREQUENCY SYNTHESIZER ~214

REFERENCE OSCILLATOR ~216

REGULATED DC POWER

POWER SUPPLY ~218

ANTENNA ~202

PREFILTER/ PREAMP ~204
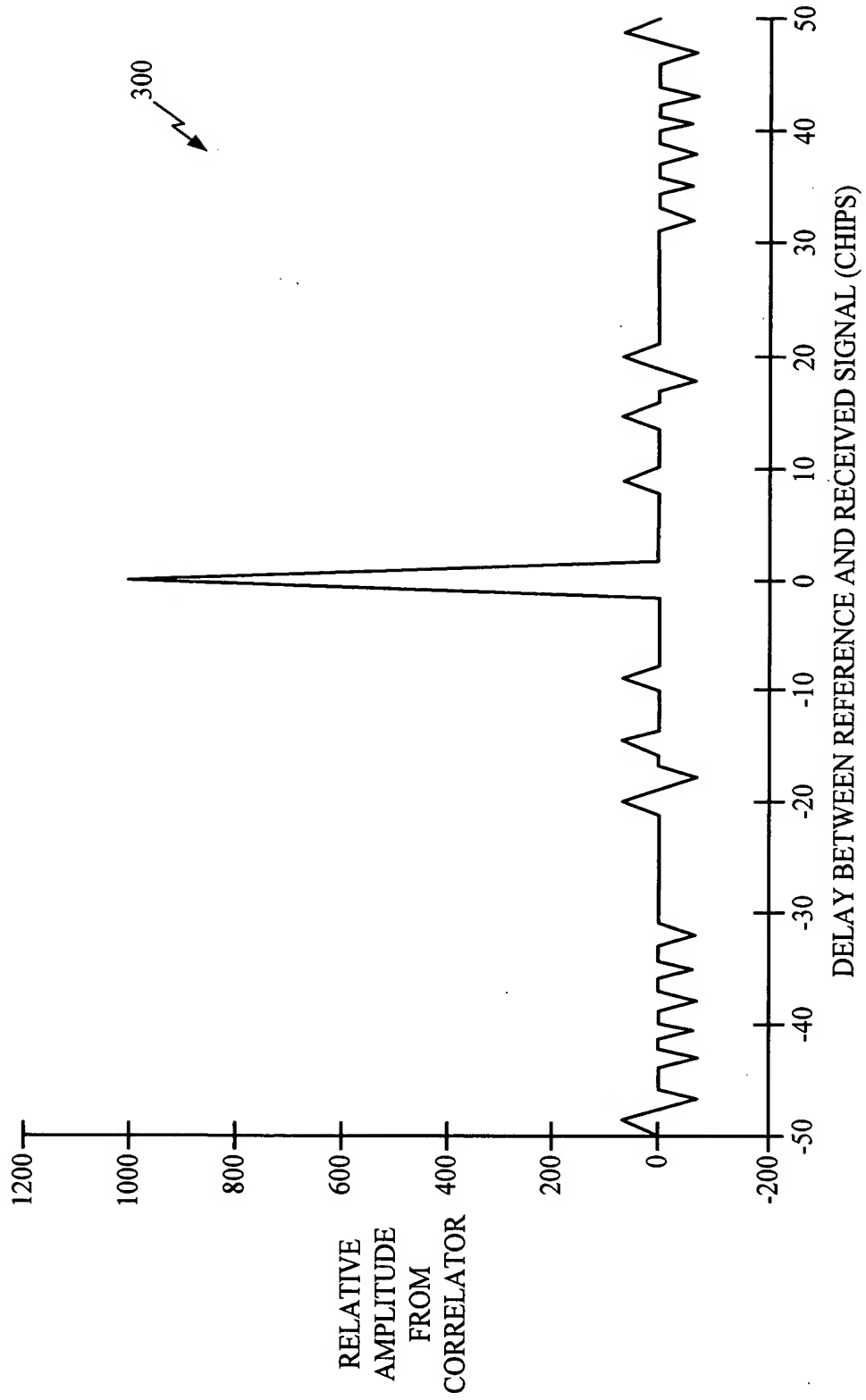
200

FIG. 2

RELATIVE
AMPLITUDE
FROM
CORRELATOR

300

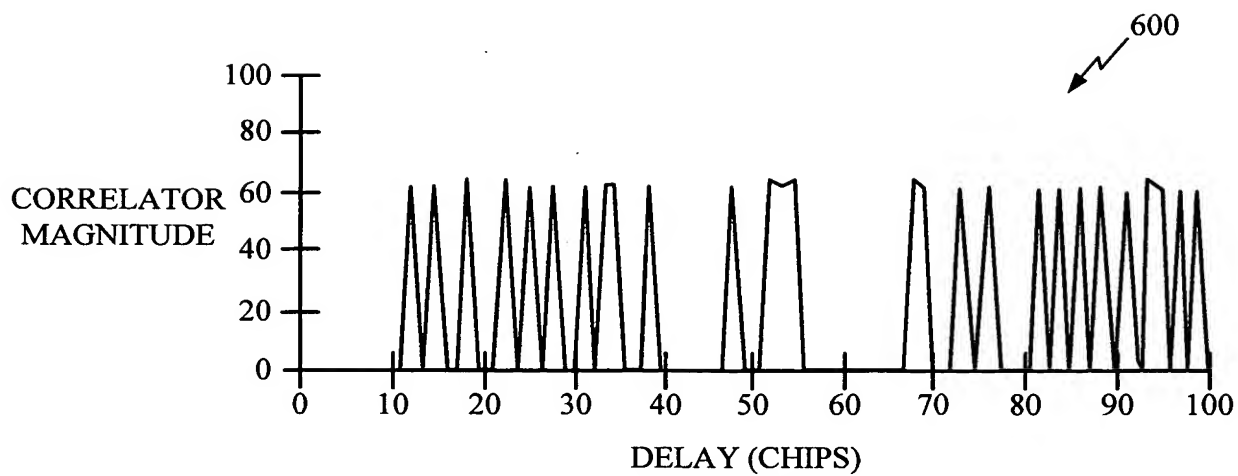DELAY BETWEEN REFERENCE AND RECEIVED SIGNAL (CHIPS)
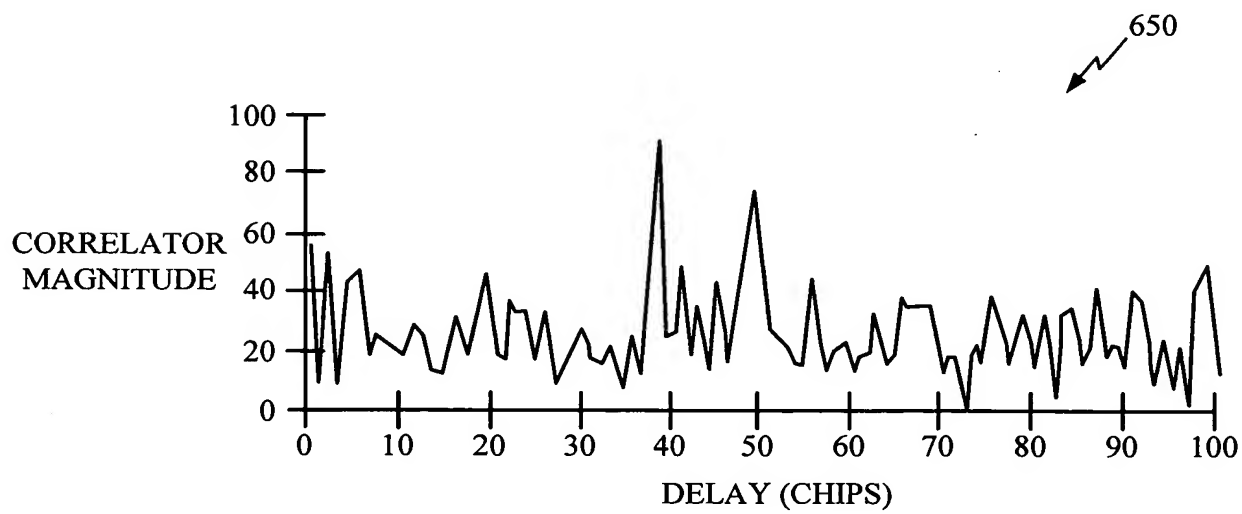
FIG. 3

FIG. 4

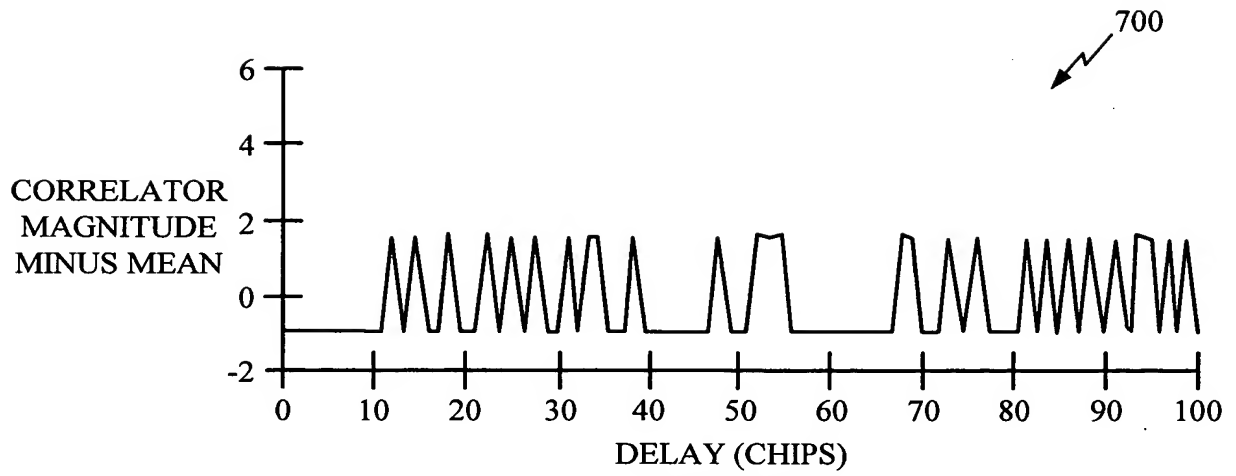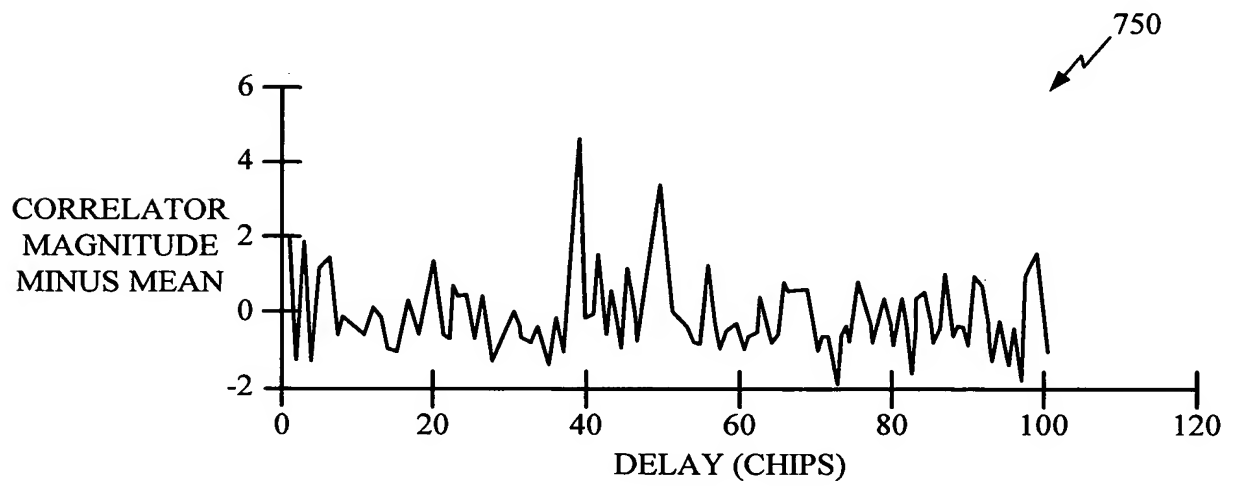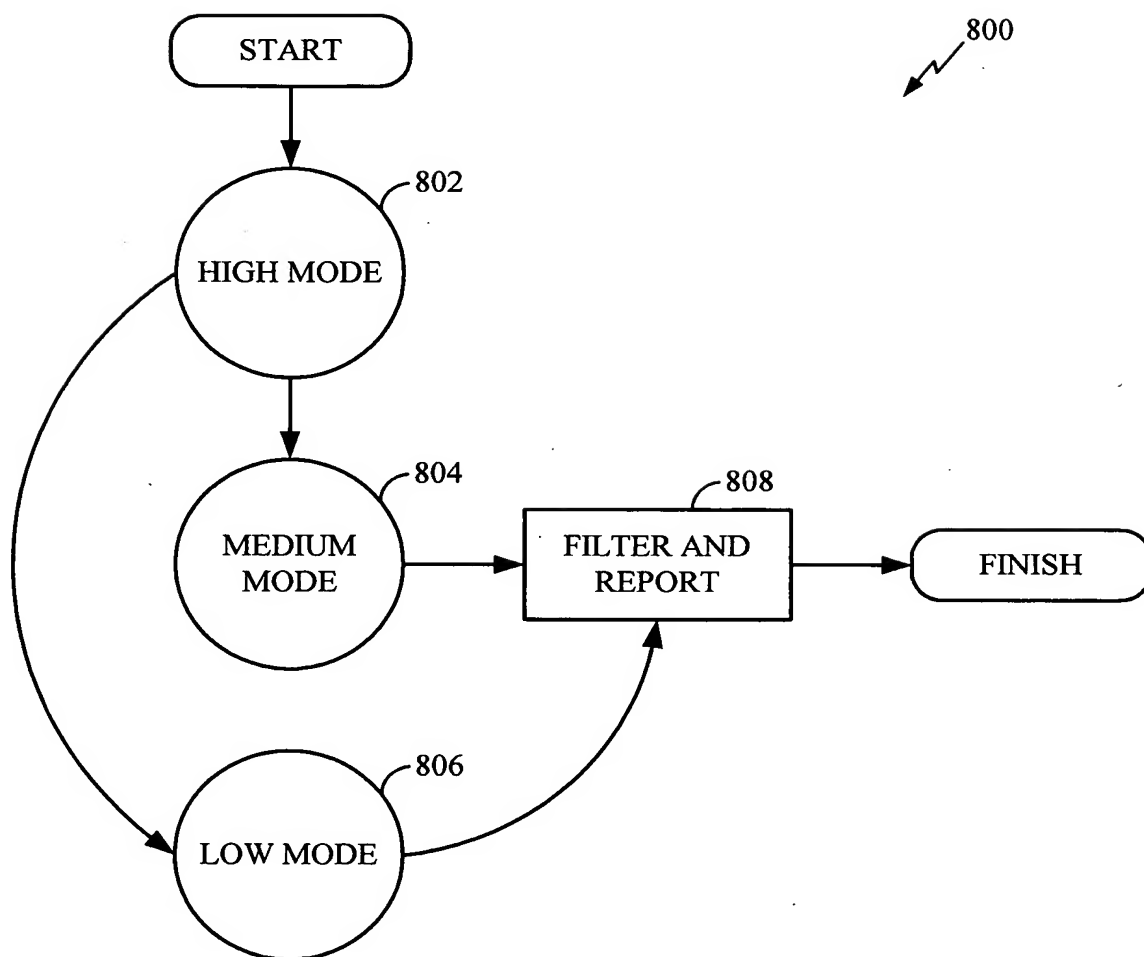FIG. 5

600

FIG. 6A

650

FIG. 6B

FIG. 7A

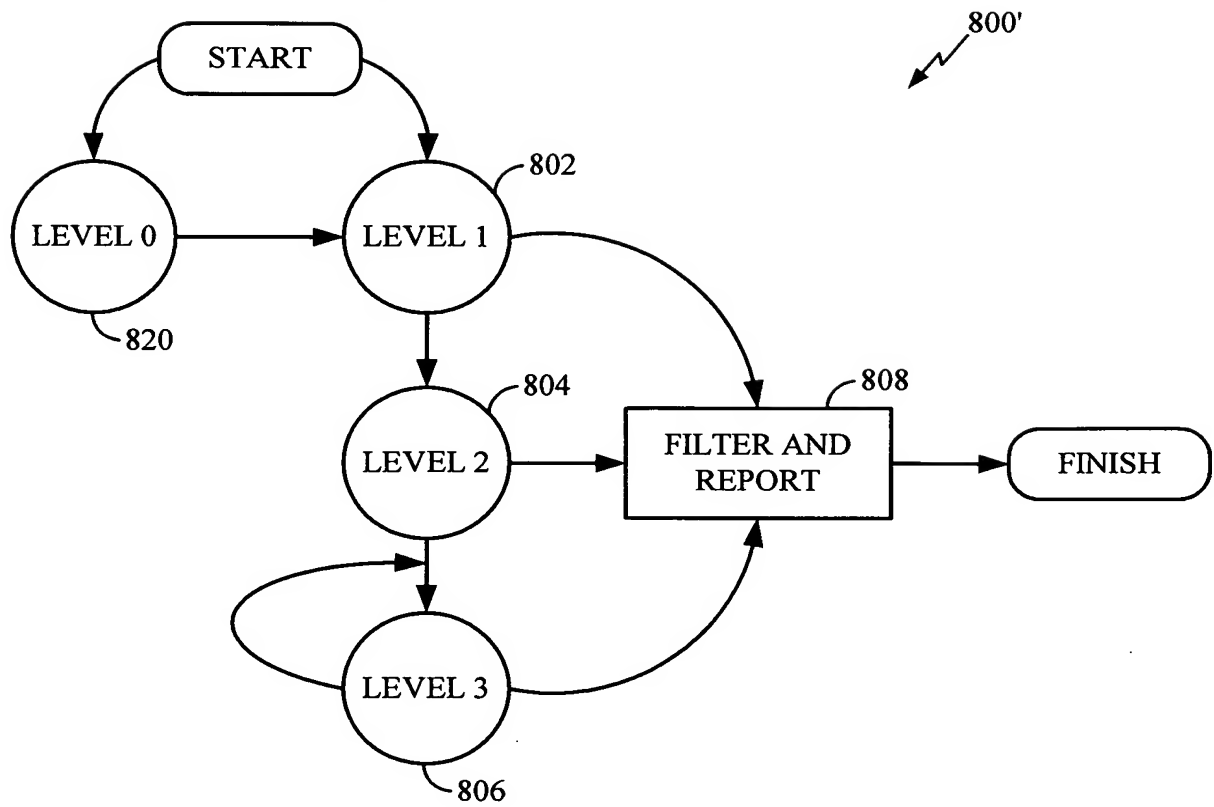FIG. 7B

FIG. 8A - GPS SEARCH MODE ARCHITECTURE STATE MACHINE

FIG. 8B - GPS SEARCH MODE ARCHITECTURE STATE MACHINE

STRONG SV RELATIVE DOPPLER

-1 KHz   0 Hz   1 KHz

$\Delta (C/No)_1$

$\Delta (C/No)_2$

$\leftrightarrow \Delta DOPP_1$

$\longleftrightarrow \Delta DOPP_2$

· · ·   910 920 920 920   920 920 920   · · ·

908

902   912 904 914   916   918
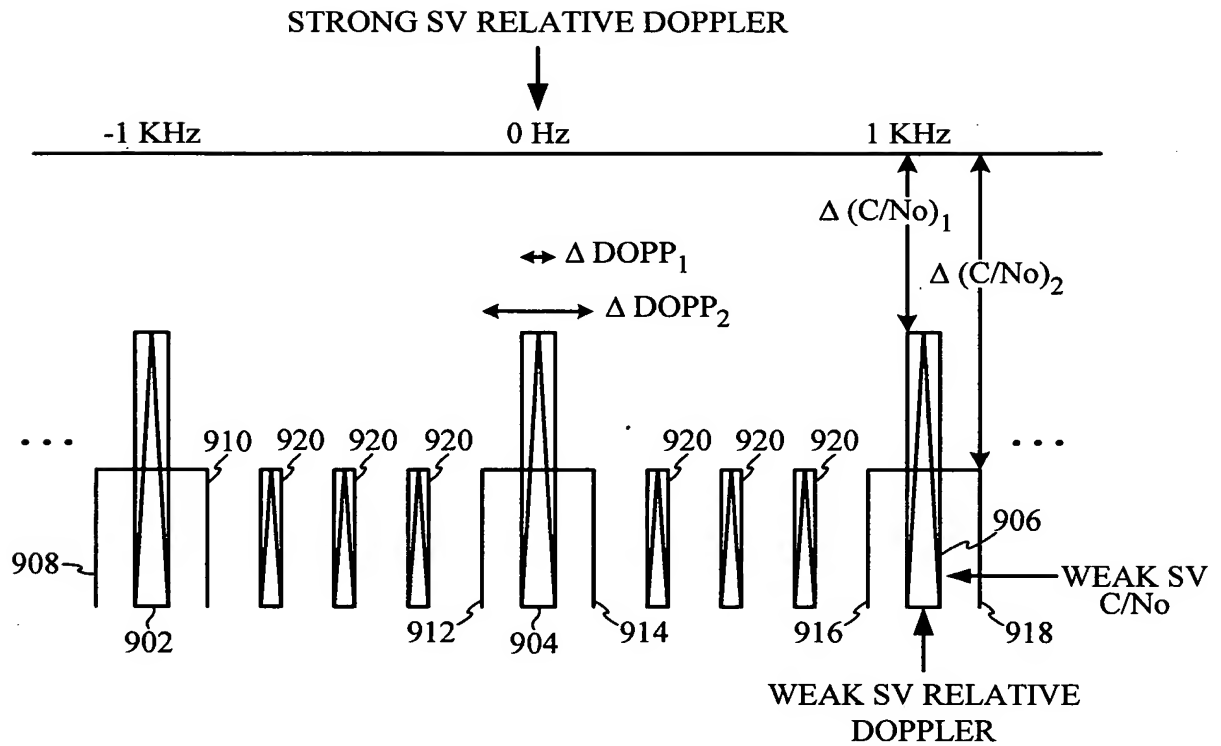
906

WEAK SV C/No

WEAK SV RELATIVE DOPPLER

FIG. 9 – CROSS-CORRELATION DETECTION REGIONS FOR HIGH AND MEDIUM SEARCH MODES
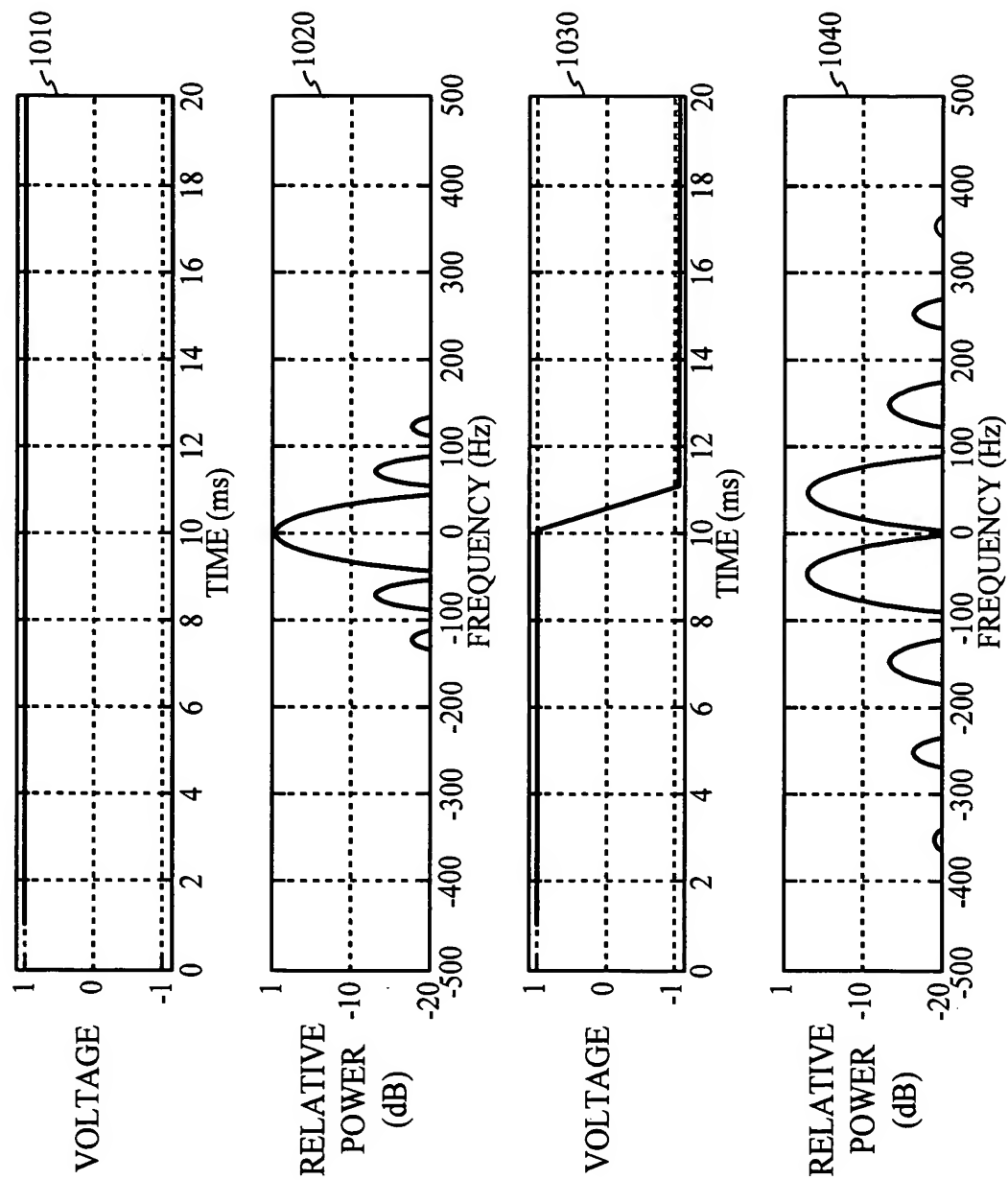
FIG. 10 - FREQUENCY RESPONSES OF TWO DIFFERENT INPUT
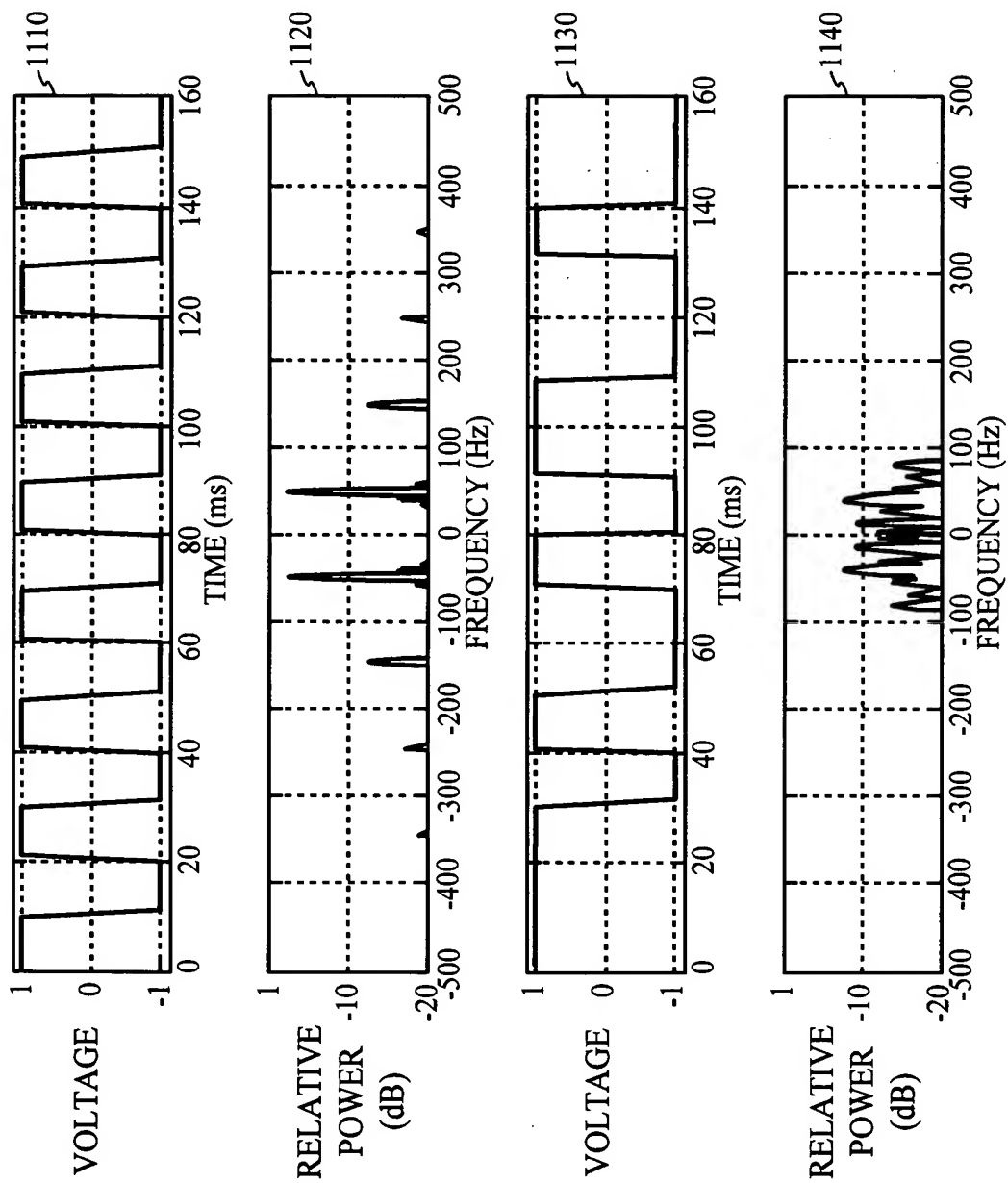SEQUENCES (20 ms COHERENT INTEGRATION).

FIG. 11 - FREQUENCY RESPONSES OF TWO DIFFERENT INPUT SEQUENCES (160 ms COHERENT INTEGRATION).
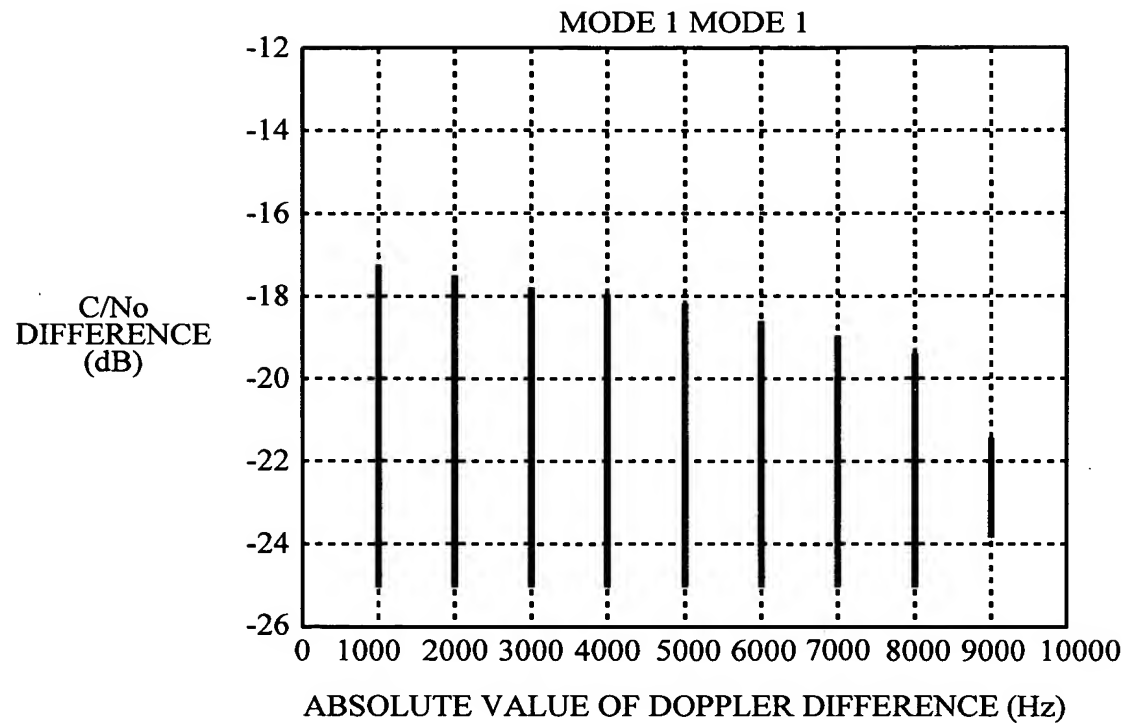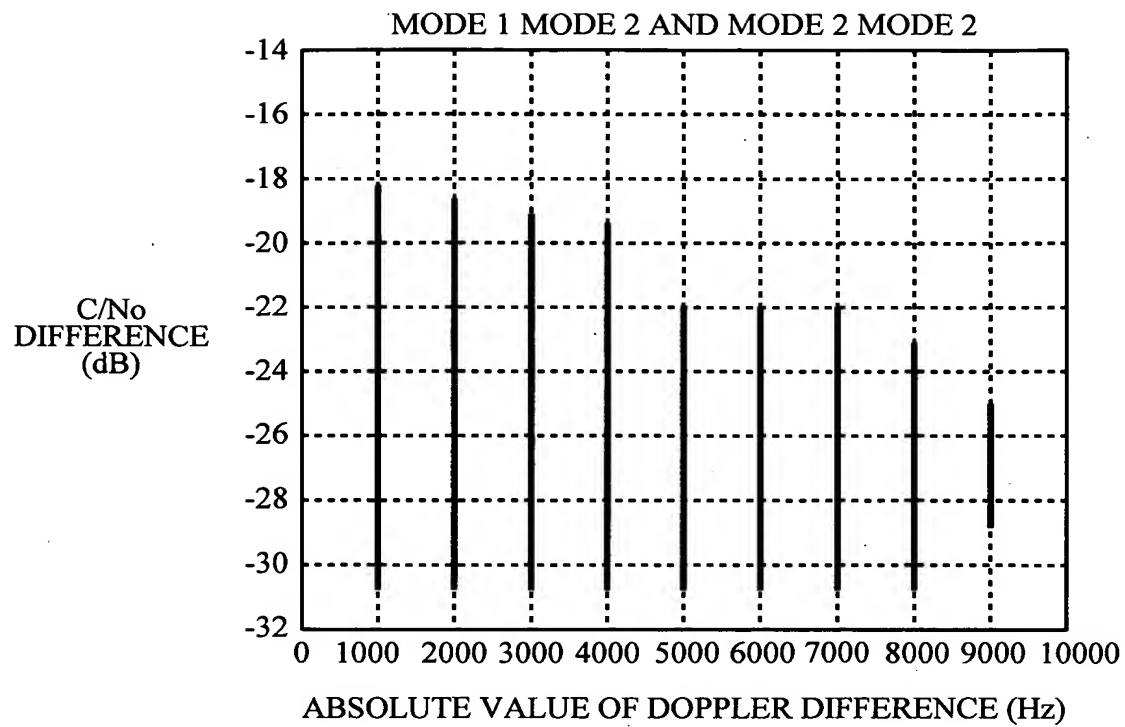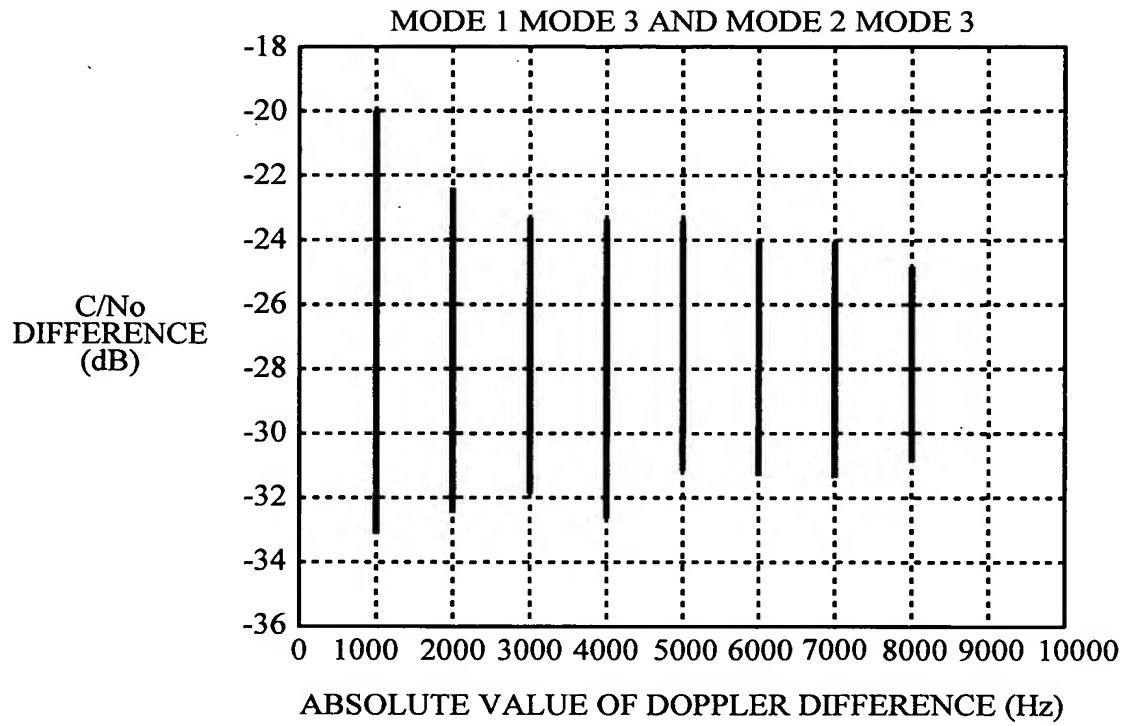
FIG. 12A

FIG. 12B

FIG. 12C

FREQUENCY

CODE PHASE 1310

FIG. 13A

FREQUENCY

CODE PHASE 1320

FIG. 13B

FREQUENCY

CODE PHASE 1330

FIG. 13C